points of the chin downwards to the hyoid bone, and deeply upwards and backwards towards the base of the tongue, should be made whenever the disease does not yield to leeches, fomentations, &c.

In the fourth volume we find *Notes of Cases treated upon Antiseptic Principles*, by the same gentleman.

Dr. WALLACE reports several cases of *Thoracentesis*, in the fourth volume.

A paper *On Fractured Ribs in Insane Patients*, contributed by Dr. T. L. ROGERS, Medical Superintendent Rainhill County Asylum, to the fourth volume, is one of the most interesting of the series. Having observed that the bones, and especially the ribs, of the insane were very easily fractured, he had the ribs of several general paralytics analyzed by Dr. J. C. Brown, and the result of the analysis may be stated to be as follows: The ratio of organic constituents to earthy matter is much greater, while the ratio of lime to phosphoric acid is distinctly less, in the ribs of paralytics than in those of healthy adults. There are the same differences between the composition of healthy ribs and those of paralytics, as between the composition of the adult large bones and those of the fœtus. He is inclined to think that the same degeneration of the bones will be found to exist in the subjects of other forms of insanity.

The Cancerous Degeneration of the Kidney in Children, is the subject of a paper in the fourth volume, by Dr. BRAIDWOOD. Three cases are reported; one of them, the first, being of great interest. The disease does not seem to be rare in children, since Dr. Roberts has collected no less than nineteen cases, affecting children less than ten years of age. It is almost always encephaloid in character. Whenever an abdominal tumour coexists with hæmaturia, the diagnosis of cancer of the kidneys is probable; but the absence of this symptom does not, by itself, exclude it. The paper is accompanied by a plate, illustrating the microscopic appearances of the disease.

The other papers, and the Proceedings of Societies, contain so little that is novel or interesting, that we forbear occupying additional space to give an abstract of them. J. H. H.

ART. XXVII.—*What is Malaria? And why is it most intense in Hot Climates? An Inquiry into the Nature and Cause of the so-called Marsh Poison, with Remarks on the Principles to be Observed for the Preservation of Health in Tropical Climates and Malarious Districts.* By C. F. OLDHAM, M.R.C.P.E., M.R.C.S.L., Assistant Surgeon H. M. Indian Forces. 8vo. pp. xvii., 186. London: H. K. Lewis, 1871.

THE question, "What is Malaria?" has perplexed others besides Dr. Oldham, and we venture to say will, in spite of the ingenious theory as to the origin of the so-called Malarial Fevers which he advocates, continue to agitate the medical profession. There is a certain convenience in assuming that these diseases are caused by a specific poison, called malaria; but no one except Dr. Salisbury has, we believe, ever asserted that he had actually discovered and isolated this poison. It is generally held, in this country at least, that the cause of the various periodical affections is the exhalations given off by decomposing vegetable matter. Close and accurate observers have, however, repeatedly pointed out that malarial fevers are prevalent and virulent in localities where vegetation, far from being luxuriant, is almost or entirely absent. In 1794, writes Fergusson, after a very hot and dry summer, intermittent and remittent fevers were epidemic in the army encamped at Rosendaal and Oosterhout, in Holland; adding: "The soil in both places was a level of land with a perfectly dry surface, where no vegetation existed or could exist but stunted heath plants." From this, and similar instances which he refers to in a paper "On the Nature and History of the Marsh Poison," published in the *Edinburgh Philosophical Transactions*, Dr. Fergusson was led to believe that neither marshes nor vegetation were necessary to produce malaria; but, on the other hand, this may prevail where these have never existed, or, having once existed, have, in consequence of drying, ceased to exist, and wholly irrespective of vegetation, living or dead; that marshes could only be injurious when they had become dry, and when the sensible putrefaction of water and vegetables had alike become impossible; and that a healthy condition of soil, in the pestiferous regions, was infallibly regained by the restoration of the marshy surface to its utmost vigour of vegetable growth and decay. Dr. Oldham quotes very similar opinions from the writings of Morehead, Bennett, and others, and gives instances which have occurred in his own experience, and in that of others, which sustain his assertion that malaria is independent of vegetable decomposition. It is, of course, well known that Dr. Wood, in his *Treatise on the Practice of Medicine*, expresses the opinion that in those places where malaria prevails, and where vegetable decomposition is, apparently, not the cause of it, careful investigation will show that the soil contains a large amount of organic material, or that the prevailing winds blow from a malarious region. Dr. Oldham shows, however, that fevers prevail in some districts where the soil is either rocky or sandy, and is found, when analyzed, to contain a very small amount of organic matter. He is indisposed, also, to attach much importance to the influence of the wind to the dissemination of the germs of malarious disease, and refers to the fact, that while the soldiers encamped in the island of Walcheren and in South Beveland were suffering severely from fevers and from dysentery, the sailors of the fleet under Commodore Mitchell, lying in the channel between them and exposed to the wind blowing at different times from both shores, did not suffer at all, although they could not have been at a greater distance than three thousand feet from the sources of the emanations. He, therefore, finds himself forced to the conclusion that malaria, as a specific poison, does not exist; but that the cause of the diseases attributed to it is chill, or, in other words, the sudden abstraction of animal heat. He thinks, moreover, "that the extreme susceptibility to cold, which is caused by long-continued exposure to great heat, intensifies the predisposition to the diseases referred to, thus causing their greater prevalence in hot climates; and that a further effect of great heat upon the system, more especially in the white races, is, by lowering the vital power, to render the type of disease more grave. Thus it arises that, in cool climates, the powerfully chilling influence of damp is necessary to the development of malaria.[1] In such climates, consequently, malarious fevers are rarely found in any but humid and marshy spots; and they generally occur in autumn, that being the period of transition from greatest heat to greatest cold; and, also, the time when the difference is most marked between daily and nightly temperature." This view, as Dr. Oldham himself intimates, does not differ from that held by Hippocrates, Paulus Ægineta, and Celsus—the former of whom attributed the diseases of autumn, in part at least, to the great and sudden variations of temperature which occur at that season.

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[1] The state of the weather about this period is highly deserving of notice; the heat is described as being extreme at one part of the day, whilst at another they were annoyed with a cold damp, accompanied with violent rain. Indeed, it is said that from first landing in Walcheren, not a single day had passed without rain.—*A Scientific and Popular View of the Fever of Walcheren*, p. xiv. By J. B. DAVIS, M.D. London, 1810.

Dr. Oldham shows very conclusively that all hot climates are not equally liable to the charge of engendering malarial disease. Periodical fevers are almost unknown in hot countries, in which the diurnal range of temperature is slight; and in those in which they prevail to the greatest extent they rarely make their appearance before the season of autumn, when the nights are sensibly cooler than the day. Moisture merely acts by furnishing to the atmosphere a good conductor, by means of which heat is more readily abstracted from the human frame. Hence it is that the vicinity of marshes is found to be unhealthy in temperate climates. In tropical countries, the disease may arise in the absence of moisture, provided the setting in of night be accompanied by a rapid and marked fall of temperature, or the subject of it have been exposed to the chilling influence of the wind. Great heat undoubtedly gives rise to many ailments, but can only predispose to intermittent and remittent fever by causing a condition of debility in which the heat-producing power is paralyzed and greater susceptibility to cold induced.

Mere humidity, in the absence of alternations of heat and cold, cannot be looked upon as an efficient cause of malarial fevers, for "in Demerara and Surinam, where the atmosphere is very moist, and the rain-fall great, the planters live, as mentioned by Fergusson and others, close to swamps, which, though far from healthy even there, would in most countries be deadly." This immunity from malaria Dr. Oldham ascribes to the diminution of the nightly chill, owing, in great measure, to the constant humidity of the atmosphere.

There are certain facts which seem to corroborate Dr. Oldham's view. Thus the river Amazon flows through a marshy country, but malarial diseases do not prevail upon its banks; while, on the other hand, they are excessively virulent upon the borders of some of its tributaries. This immunity of the valley of Amazon is attributed by Humboldt to the strong wind which, rising two hours after mid-day, blows constantly against the stream, and must tend to render the climate mild and equable, and in effect the decrease of temperature at night has been found by Bates never to be more than a pleasant coolness. On the branch rivers, where the sea-breeze is not felt, "the air is hot, sultry, and stagnant by day, and chill and damp by night." It has been hitherto difficult to explain the occurrence of malarial diseases upon rocky surfaces, for here we certainly cannot have organic matter in the process of decay; the difficulty is not so great, if we accept the theory urged in the book before us. Certain rocks become intensely heated, if exposed to the direct rays of the sun. Thus Humboldt says, that "when walking between the hours of one and three in the afternoon at Carichana, Atures, or Maypures, amongst blocks of stone, destitute of vegetable mould, and piled up to great heights, one feels a sense of suffocation, as if standing before the opening of a furnace." During the *night*, the temperature of the rocks was observed to be 21.6° F. lower than during the day. This theory explains, also, the well-known fact, an instance of which has already been referred to in the course of this notice, that ships at sea, although lying within a short distance of a malarious coast, frequently seem to enjoy a protection against the inroads of the disease, provided that there is no communication with the shore, or communication with the shore only during the day. It is well known that all bodies of water become heated very slowly, and give out their heat very gradually, and, consequently, the atmosphere at sea is not subject to the same vicissitudes of temperature as on shore. Water, however, to afford this immunity, must be of some extent, and have depth; hence, the navigators of rivers in malarious regions are not less liable than the inhabitants of their banks, to the diseases of the country.

We are able, also, to understand the influence of fire and of smoke in counteracting the effects of malaria; for the effect of a large fire must be to heat the current of air passing over it, depriving it of part of its moisture; while the smoke, forming a cloud overhead, effectually checks the radiation—a fact, we may add, perfectly well known to the peasants of the valley of Chamouni, who build fires of green wood, in order that the valley may be overhung by a canopy of smoke, which, reflecting the heat radiated from the earth, thus prevents the formation of frost.

The individual who has once suffered from periodical fevers is liable, for some time afterwards, to vernal and autumnal relapses of the disease. These were difficult of explanation under the theory which attributed the original attack to the influence of the emanations from decomposing vegetable matter, but this difficulty, Dr. Oldham thinks, disappears, if the theory which he advocates be adopted. It is in the spring and fall that the diurnal range of the thermometer is greatest, and, consequently, it is at these times that the effects of the abstraction of heat or chill are most likely to be experienced. Our author, in support of his views, advances the fact that those who are least protected against cold are those who are most apt to suffer from malarial fevers, and, consequently, that the officers of the Indian army, and the merchants of India, enjoy a comparative immunity from affections which are of frequent occurrence among the common soldiers and the Hindoos.

In the preceding abstract, we have endeavoured to lay before our readers Dr. Oldham's views as to the cause of diseases which have been hitherto attributed to malaria. There is, certainly, much in them that is novel to those who are acquainted only with the works of the most popular writers on malarial disease; and we certainly cannot refuse him the tribute due to one who has had good opportunities of studying the subject, and has made good use of them. We find ourselves, however, not fully convinced by his arguments, although we confess he has done much by them to destroy the wavering faith we reposed in the more generally accepted theory. J. H. H.

Art. XXVIII.—*Clinical Report of the Rotunda Lying-in Hospital for the Year ending 5th November,* 1870. By George Johnston, M.D. Edin.; Fellow of the King and Queen's College of Physicians; Master of the Rotunda Lying-in Hospital, etc. etc. Printed for the Author by John Falconer, Dublin, 1871.

This valuable Report, first read before the Dublin Obstetrical Society, has been reprinted in a pamphlet form from the *Dublin Quarterly Journal of Medical Science*, February, 1871. Although bearing the traces of being provoked by the two great controversies on Hospitals and Hospitalism, between Sir James Simpson and Mr. Holmes, and between Dr. E. Kennedy and the Dublin Obstetrical Society, in which the author took an active part, it is a sober and logical paper, singularly free from any exhibition of partisan warmth.

The author has here utilized the statistics of a year's work at the Rotunda, in order to prove the four following propositions:—